IN THE CLAIMS:

Please amend Claims 1, 21 and 27, and add new Claims 28 and 29 as follows:

1. (Currently Amended) An information processing apparatus that derives the calibration information needed to measure the position and/or orientation of a measuring object based on the output values of a position and/or orientation sensor, comprising:

a real image input unit, which is mounted on the measuring object, adapted to input a real image;

a virtual image generation unit adapted to generate a virtual image of indices using geometry information of the indices to be captured by said real image input unit, and a predetermined position and/or orientation of said measuring object;

a position and/or orientation sensor mounted directly or indirectly on the measuring object;

an input unit adapted to input a user's instruction indicating ~~a match between~~ that a position and/or orientation, which changes according to movement of a mixed reality display device, of the indices on the real image input by said real image input unit ~~and~~ has been matched with a position and/or orientation of the indices on the virtual image generated by said virtual image generation unit;

an acquisition unit adapted to acquire the output values from the position and/or orientation sensor according to the input by said input unit; and

an operation unit adapted to derive the calibration information, based on the predetermined position and/or orientation and the output values of the position and/or orientation sensor acquired by said acquisition unit.

2. (Previously Presented) The information processing apparatus according to claim 1, wherein:

said position and/or orientation sensor outputs the output values that represent the position and/or orientation of said sensor itself in the sensor coordinate system; and

said calibration information contains first coordinate transformation information for converting the position and/or orientation of said sensor itself in the sensor coordinate system into the position and/or orientation of said measuring object in the sensor coordinate system and second coordinate transformation information for converting the position and/or orientation in the sensor coordinate system into the position and/or orientation in a global coordinate system.

3. (Previously Presented) The information processing apparatus according to claim 1, further comprising guiding means for guiding said measuring object to said predetermined position and/or orientation.

4. (Previously Presented) The information processing apparatus according to claim 2, wherein:

the measurement of said position and/or orientation is measurement of position and orientation, and said sensor is a position and orientation sensor; and

said operation unit performs the process of determining orientation information among said first coordinate transformation information and position information among said second coordinate transformation information.

5. (Previously Presented) The information processing apparatus according to claim 2, wherein:

the measurement of said position and/or orientation is measurement of only orientation, and said sensor is an orientation sensor; and

said operation unit performs the process of determining pitch-angle and roll-angle information among said first coordinate transformation information and yaw-angle information among said second coordinate transformation information.

6. (Previously Presented) The information processing apparatus according to claim 2, wherein:

the measurement of said position and/or orientation is measurement of only orientation, and said sensor is an orientation sensor; and

said operation unit performs the process of determining yaw-angle information among said second coordinate transformation information.

7. (Cancelled)

8. (Previously Presented) The information processing apparatus according to claim 1, wherein said measuring object is the viewpoint of the user observing a display device that displays a virtual object superimposed over the real space transmitted optically through a display screen.

9. (Previously Presented) The information processing apparatus according to claim 1, wherein said real image input unit captures a real space, and said measuring object is the viewpoint of said real image input unit.

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Previously Presented) The information processing apparatus according to claim 1, wherein said indices have an area or volume in real space and said geometry information contains shape information of the indices.

15. (Previously Presented) The information processing apparatus according to claim 14, wherein the virtual image of the indices is a wire frame image.

16. (Cancelled)

17. (Previously Presented) The information processing apparatus according to Claim 1, further comprising:

switching means for switching between a presentation mode that presents mixed reality and a derivation mode that derives calibration information.

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Currently Amended) An information processing method that derives the calibration information needed to measure the position and/or orientation of a measuring object based on the output values of a position and/or orientation sensor, comprising the steps of:

entering a real image derived from a real image input unit;

generating a virtual image of indices having a predetermined position and/or orientation;

inputting position and/or orientation information from the sensor when a position and/or orientation of the indices included in the real image matches a position and/or orientation of a virtual image of the ~~indices,~~ indices; and

generating calibration information from the inputted position and/or orientation information and predetermined position and/or orientation of the indices.

22. (Cancelled)

23. (Previously Presented) A computer-readable storage medium which stores the program code for executing the information processing method according to claim 21.

24. (Cancelled)

25. (Previously Presented) The information processing method according to claim 21, wherein there is a predetermined position relationship between said real image input unit and the measuring object, and the position and/or orientation of the indices included in the real image and the position and/or orientation of a virtual image of the indices are matched by changing a position and/or orientation of said real image input unit.

26. (Previously Presented) The information processing method according to claim 21, wherein the virtual image of the indices is a wire frame image.

27. (Currently Amended) The information processing apparatus according to claim 1, further ~~comprising,~~ comprising equipment for setting the position and/or orientation of the measuring object to initial states.

28. (New) An information processing method that derives the calibration information needed to measure the position and/or orientation of a measuring object based on the output values of a position and/or orientation sensor, which measures the position and/or orientation of the measuring object, comprising:

a generation step of generating images indicating indices to be observed on a display screen when a user observes the display screen at a position and/or orientation of a viewpoint determined in advance, based on the position and/or orientation of the viewpoint;

an input step of inputting a user's instruction indicating that indices in a real space and the images generated in the generation step are matched on the display screen;

an acquisition step of acquiring the output values from the position and/or orientation sensor according to the input in said input step; and

a calculation step of calculating the calibration information, based on information indicating the position and/or orientation of the viewpoint and the output values of the position and/or orientation sensor acquired in said acquisition step.

29. (New) The information processing method according to claim 28, wherein:

the position and/or orientation sensor is mounted on the measuring object directly or indirectly, and the output values of the sensor represent the position and/or orientation of the sensor itself in the sensor coordinate system; and

the calibration information contains first coordinate transformation information for converting the position and/or orientation of the sensor itself in the sensor coordinate system into the position and/or orientation of the measuring object in the sensor coordinate system and second coordinate transformation information for converting the position and/or orientation in the sensor coordinate system into the position and/or orientation in a global coordinate system.